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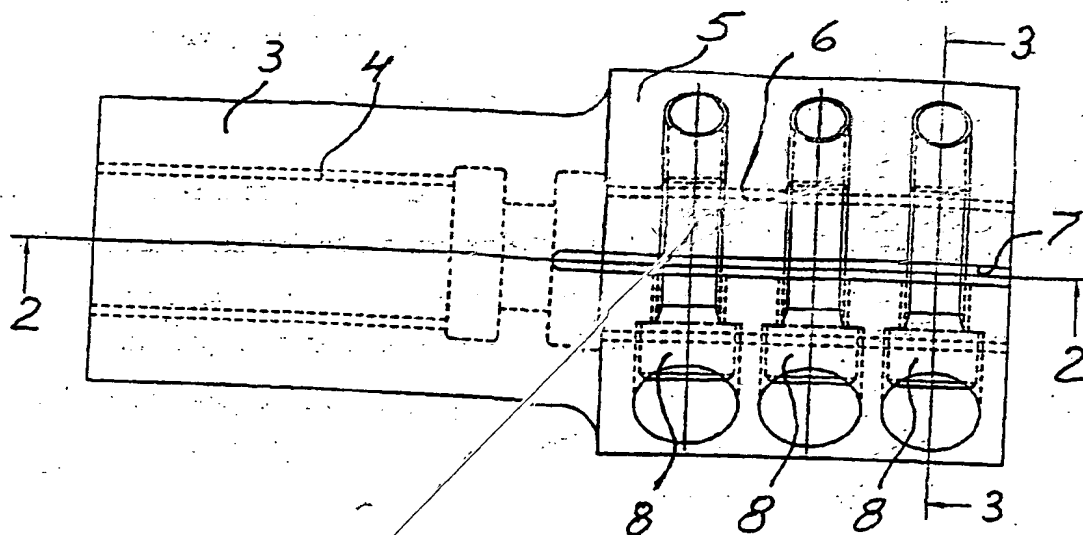
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For two-letter codes and other abbreviations, refer to the "Guidance Notes on Codes and Abbreviations" appearing at the beginning of each regular issue of the PCT Gazette.

(54) Title: **COUPLING SLEEVE FOR CONNECTION OF A THREADED ROCK BOLT TO AN IMPACT ROCK DRILLING MACHINE**



(57) Abstract: Coupling sleeve for connection of a threaded rock bolt (1) to an impact rock drilling machine (2), the coupling sleeve comprises a first part (3) provided with an internal thread (4) for connection of the rock bolt (1) and a second part (5) provided with an internal thread (6) for connection of the rock bolt (1) and a second part (5) provided with a longitudinal slot (7) for connection of the rock drilling machine (2). The second part (5) comprises a longitudinal slot (7) and clamping means (8) for squeezing the slot (7) through which the second part (5) is clamped about the rock drilling machine (2).

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Coupling sleeve for connection of a threaded rock bolt to an impact rock drilling machine

The present invention relates to a coupling sleeve for connection of a threaded rock bolt to an impact rock drilling machine. More specifically the invention relates to an execution of the coupling sleeve which secures that a certain of the two screw joints of the coupling sleeve is loosened first when disconnecting the rock drilling machine from the rock bolt.

According to a prior art solution to secure that a certain thread joint is loosened first, see SE 433097, threads with different pitches or cones are used to achieve a thread joint which is substantially more difficult to loosen than the other. These solutions have the drawback that one has to use nonstandardized parts. At use one also has to keep track of which end is which in order to achieve correct connection.

The present invention, which is defined in the subsequent claim, aims at avoiding the above drawbacks through using substantially the same thread in both joints and that the joint which should be more difficult to loosen by means of a mechanical joint is prevented from loosening when the rock drilling machine and the rock bolt are separated.

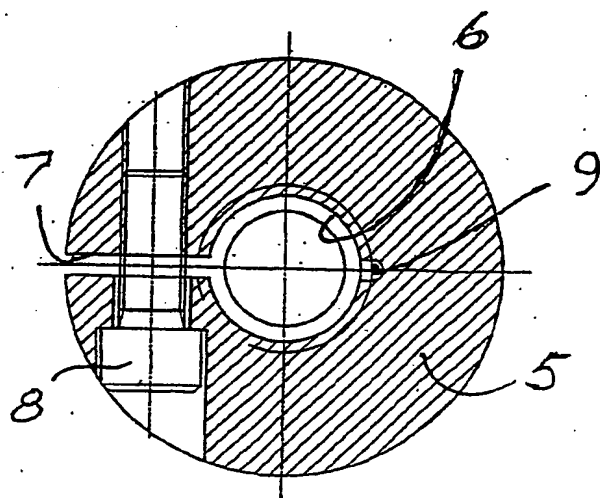
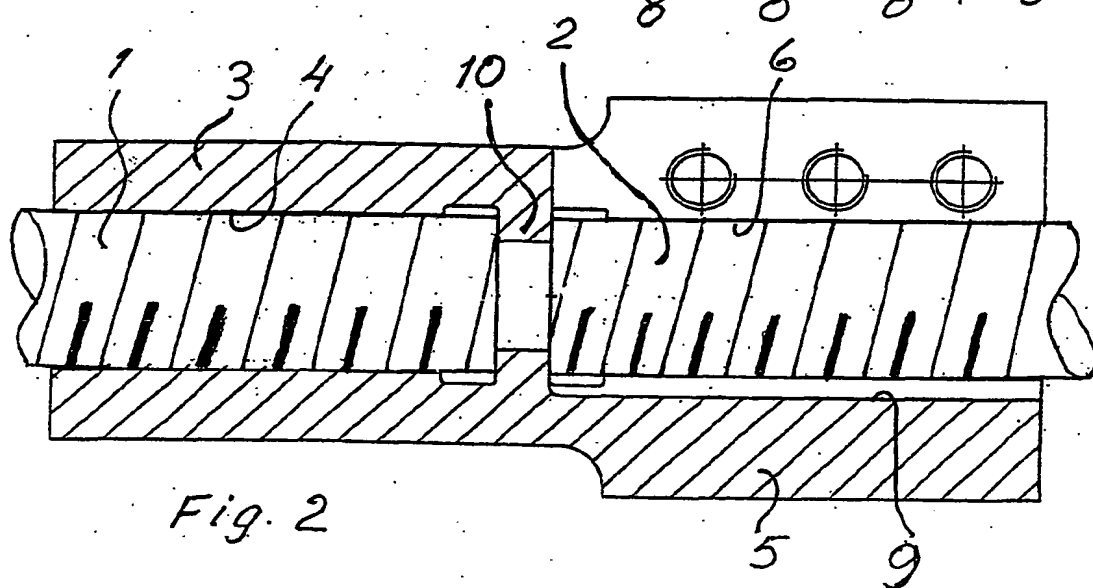
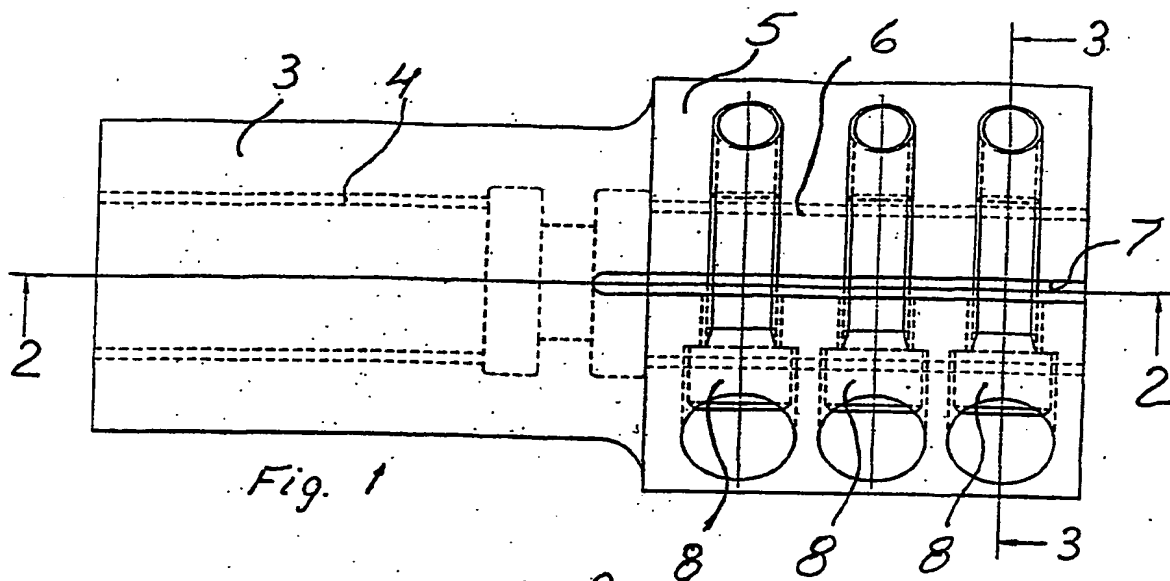
An embodiment of the invention is described below with reference to the accompanying drawing in which fig 1 shows a coupling sleeve according to the invention. Fig 2 shows a section according to 2-2 in fig 1 and with rock bolt and rock drilling machine connected. Fig 3 shows a section according to 3-3 in fig 1.

The coupling sleeve shown in the drawing comprises a first part 3 provided with an internal thread 4 to which a threaded rock bolt 1 is connectable. The threaded rock bolt is provided with a not shown drill bit for drilling the hole in which the rock bolt is to be anchored. The coupling sleeve also comprises a second part 5 provided with an internal sleeve 6 to which a rock drilling machine is connectable. In the drawing the shank adapter belonging to the rock drilling machine is shown. The second part 5 comprises a longitudinal slot 7 and clamping means 8. The clamping means are in the shown example three screws 8 by means of which the slot 7 can be pressed together so that the second part 5 can be squeezed about the shank adapter of the rock drilling machine 2. The second part 5 is provided with a

groove 9 so that deformation of the thread 6 at clamping of the second part 5 about the rock drilling machine 2 does not become disturbing for the functioning. The coupling sleeve is also provided with a flange 10 against which the rock bolt 1 and the shank adapter of the rock drilling machine 2 rest. The impact energy of the rock drilling machine is transferred via the flange 10 to the rock bolt 1 when it is drilled into the ground in which the rock bolt is to be anchored. By means of the shown design it is secured that the thread joint between the rock bolt 1 and the thread 4 is the joint which is loosened when the connection between the rock drilling machine and the rock bolt is broken.

## Claim:

1. Coupling sleeve for connection of a threaded rock bolt (1) to an impact rock drilling machine (2) comprising a first part (3) provided with an internal thread (4) for connection of the rock bolt (1) and a second part (5) provided with an internal thread (6) for connection of the rock drilling machine (2), characterized in that the second part (5) comprises a longitudinal slot (7) and that a clamping means (8) is arranged to clamp the second part (5) to the rock drilling machine (2) through squeezing the slot (7).



## INTERNATIONAL SEARCH REPORT

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## A. CLASSIFICATION OF SUBJECT MATTER

IPC7: E21B 17/042

According to International Patent Classification (IPC) or to both national classification and IPC

## B. FIELDS SEARCHED

Minimum documentation searched (classification system followed by classification symbols)

IPC7: E21B

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

SE,DK,FI,NO classes as above

Electronic data base consulted during the international search (name of data base and, where practicable, search terms used)

EPO-INTERNAL

## C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
A	US 2066276 A (E.R. HARRALL ET AL), 29 December 1936 (29.12.36)  --	1
A	WO 9830806 A1 (VANDERDRIFT, R.W. ET AL), 16 July 1998 (16.07.98)  -- -----	1

☐ Further documents are listed in the continuation of Box C.☒ See patent family annex.

## \* Special categories of cited documents:

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- "P" document published prior to the international filing date but later than the priority date claimed

"T" later document published after the international filing date or priority date and not in conflict with the application but cited to understand the principle or theory underlying the invention

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Information on patent family members

28/01/02

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Patent document cited in search report			Publication date	Patent family member(s)	Publication date
US	2066276	A	29/12/36	NONE	
WO	9830806	A1	16/07/98	NONE	

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